

Investigation of the relationship between a healthy lifestyle, self-esteem and subjective vitality of the elderly in Sirjan in 2020

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Abstract

Introduction: This study was conducted aimed to determine the relationship between a healthy lifestyle, self-esteem and subjective vitality of the elderly in Sirjan in 2020.

Method: In this descriptive-analytical study, 200 elderly people aged 60 years and older were selected from comprehensive health centers in Sirjan by two-stage random sampling method. The data were collected using validated Healthy Lifestyle Questionnaire among Iranian Elderly, Rosenberg Self-Esteem Scale and validated Subjective Vitality Scale.

Results: The mean and standard deviation of healthy lifestyle score was 134.42 ± 13.78 , 36.34 ± 4.62 for self-esteem and 21.80 ± 2.85 for subjective vitality. A direct and significant relationship was between healthy lifestyle and self-esteem ($p < 0.001$) and between healthy lifestyle and subjective vitality ($p < 0.001$).

Conclusion: A direct and significant relationship was between healthy lifestyle, self-esteem and subjective vitality of the elderly. Therefore, the elderly should take care of their health and benefit from self-esteem and vitality by selecting a healthy lifestyle.

Introduction

Today, population aging is considered as a common concern in all countries of the world ¹. As the World Health Organization (WHO) calls the 21st century the century of the elderly ². According to the organization, in 2015 the number of elderly people in the world was 841 million, which is expected to double by 2050 ³. Along with the growth of the elderly population in the world, the elderly population in Iran is also increasing and it is expected that by 2050, one in four people in Iran will be elderly ⁴. Previously, the population growth trend was such that between 1956 and 2016 i.e. during 60 years, the elderly population of Iran increased by 542% (approximately 9% per year) ⁵.

Moving towards old age never stops, but using preventive methods and appropriate precautions, many disabilities and problems of this period can be prevented and the aging process can be delayed ⁶. The best way to empower the elderly and prevent their problems is to select a healthy lifestyle ⁷. This, while preventing chronic diseases, leads to the independence and autonomy of the elderly, as well as greater participation in social activities ⁸. Although it is better to start a healthy lifestyle at an early age, it is never too late to develop good habits and lifestyle modifications to maintain health ⁹. On the other hand, one of the factors affecting people's lifestyle is having self-esteem, which as a motivating force by creating a positive subjective image in a person causes responsibility for health and self-care in a person and leads to a healthy lifestyle ¹⁰. Therefore, when the elderly believe in their abilities, in addition to having self-esteem, they also benefit from subjective vitality. Vitality means being fresh and not worn out. So a lively person is full of energy and desire for life. When vitality is low, frustration and fatigue cause inability to perform appropriate tasks and activities, and conversely, high vitality increases energy and power to

perform activities and the person has good mood ¹¹. The elderly become dependent on others due to weakness and inability and feel emptiness and worthlessness, which reduces life satisfaction, self-esteem and vitality ¹². The results of a study showed that the elderly with subjective self-efficacy and belief in their ability have subjective health, optimism, emotional and social support and benefiting from these factors reduces discomfort and anxiety, strengthens feelings of self-worth, improves self-esteem and life satisfaction ¹³. According to the results of a study, the elderly should have good physical and subjective health in order to be more present in society and enjoy a happy and independent life with a positive attitude and self-esteem ¹⁴. Another study showed that if the elderly had a pleasant image and feeling good about themselves as well as self-esteem, they would use the necessary skills to have a healthy lifestyle, which would increase hope for the future, vitality, and calmness. For example, improving performance in the field of physical activities reduces boredom and depression and finally leads to vitality in the elderly ¹². It seems that a healthy lifestyle is considered as one of the important factors in active aging that its relationship with psychological variables has been considered less, so the present study was conducted aimed to determine the relationship between a healthy lifestyle, self-esteem and subjective vitality of the elderly in Sirjan in 2020 to be useful in designing and prioritizing interventions related to promoting the health of the elderly by better understanding the lifestyle and related factors.

Method

This descriptive-analytical cross-sectional study was conducted on the elderly in Sirjan in 2020. Inclusion criteria included willingness to participate in the study, age 60 years and older, and having no speech disorder and Alzheimer's disease. Exclusion criteria included unwillingness to participate in the study. The sample size was calculated according to a similar study conducted by Barghi Irani et al. ¹⁵. In their study, the correlation coefficient between variables of lifestyle, psychological capital and self-care behaviors in the elderly ranged from 0.3 to 0.5. After searching and not finding a similar study, it was assumed that the correlation coefficient between healthy lifestyle, self-esteem and subjective vitality is similar to the reference mentioned above and at least 0.3. The following formula was used to determine the sample size:

$$n = \left(\frac{z_{\alpha/2} + z_{1-\beta}}{|z'_{r0} - z'_{r1}|} \right)^2 + 3$$

Assuming type I error was 0.01 and type II error was 0.1, according to the formula, at least 159 people were calculated and for better estimation, 200 people were included in the study. Two-stage random sampling method was used for sampling. Among 12 comprehensive health centers in Sirjan, 4 centers were randomly selected and then by referring to selected centers, a list of elderly people eligible to participate in the study was prepared from each center and then 50 people from each list entered the study by simple random method. It continued until it reached the desired sample size of 200 people.

The data were collected using a four-part questionnaire. The first part was related to demographic information (including age, gender, level of education, marital status, and employment status) and the second part was a 46-item questionnaire measuring a healthy lifestyle among Iranian elderly, which was designed and validated by Eshaghi et al. (2007 and 2008) in Isfahan: 15 questions in the field of accident prevention, 5 questions in the field of sports, 14 questions in the field of healthy nutrition, 5 questions in the field of stress management and 7 questions in the field of social relations. The questions were coded on a 5-point Likert scale (very low, low, moderate, high and very high) and the lowest score of the questionnaire was 42 and the highest score was 211. In a study by Babak et al., the face and content validity of this questionnaire was confirmed and Cronbach's alpha coefficient was calculated to be 0.76¹⁶.

The third part of Rosenberg Self-Esteem Scale was used, which measures a person's attitude toward himself with 10 items on the Likert scale (strongly agree, agree, disagree, and strongly disagree). The range of scores of this questionnaire varies from 10 to 40, with the score 10 as the lowest and 40 as the highest self-esteem. This scale is a valid and reliable tool. Greenberger et al. validated this tool using its structural validity¹⁷. Also, Hojjati et al. reported its reliability with Cronbach's alpha coefficient of 0.78¹⁸.

The fourth part used Subjective Vitality Scale, designed by Ryan and Frederick. The internal consistency of this scale was reported to be 0.96 in their study. This tool contains 7 questions that are scored on a 7-point Likert scale. The scores range from 7 to 35. In a study by Arabzadeh, the reliability of this tool was calculated with Cronbach's alpha coefficient of 0.79¹¹.

In the present study, the content validity was used to measure the validity of Healthy Lifestyle and Subjective Vitality Questionnaire. First, the questionnaires were given to ten experts in the field of health education and health promotion (n = 5) and elderly health (n = 5) to determine the quality validity of the content. After receiving the correction suggestions, the incorrect questions were corrected and the inappropriate questions were removed and replaced with other questions. Then, in order to determine the quantity validity of the content, they were first asked to review the questionnaire item in terms of the following: which questions should be included in the questionnaire, which questions are useful but unnecessary, and which questions are not necessary and should be excluded. Second, whether the questions of each construct reflect the relevant construct, and finally the simplicity, clarity and cultural appropriateness of each question were assessed. Given that we had ten experts, the minimum value for the content validity according to the criteria in Lawshe table was considered 0.62¹⁹.

According to the formula
$$CVR = \frac{n_E - \frac{N}{2}}{\frac{N}{2}}$$
 content validity was calculated for each item. According to the results, the content validity in the Healthy Lifestyle Questionnaire was more than 0.62 for 33 items and in the range of 0.7 to 1, which were confirmed, and for 13 items, it was less than 0.62, which were removed. The content validity of subjective vitality questionnaire was more than 0.62 for 5 items and in the range of 0.7 to 1, which were confirmed, and for 2 items was less than 0.62, which were excluded. Also, in order

to determine the content validity of each item, the opinions of the experts in the form of three criteria of relevance, simplicity and clarity on a 4-point Likert scale (for example 1: not relevant, 2: somewhat relevant, 3: relevant and 4: completely related) received for each criterion. In order to calculate the content validity according to the formula $CVI = \frac{n}{N}$ the number of experts agreeing with the first two options of each criterion for each item was calculated and divided by the total number of experts i.e. 10, and thus, CVI of each item was determined. The minimum value of the content validity is 0.79²⁰. The results of calculating CVI for Healthy Lifestyle Questionnaire showed that every 33 items had CVI score higher than 0.79 and were considered appropriate. The value of validity for all constructs was calculated by averaging the item of each construct. Finally, the value of content validity of prevention was 0.82, 0.87 for healthy nutrition, 0.92 for exercise, 0.87 for stress management and 0.85 for social relations. Thus, Healthy Lifestyle Questionnaire has 33 questions and includes 5 fields of prevention (11 questions), healthy nutrition (10 questions), exercise (4 questions), stress management (4 questions), social relations (4 questions) and all questions were scored on a 5-point Likert scale (very high, high, moderate, low, very low and never), and "very high" was given a score of 5 and "very low and never" were given a score of 1. Questions 5, 6 and 7 were scored in reverse. As a result, for a healthy lifestyle, the lowest score achieved through the questionnaire was 33 and the highest score was 165. Also, the results of CVI calculation for Subjective Vitality Questionnaire showed that all 5 items had CVI score higher than 0.79 and were considered appropriate. The value of content validity for the questionnaire was 0.87. As a result, Subjective Vitality Questionnaire consisted of 5 questions that were scored on a 5-point Likert scale (strongly disagree, disagree, have no opinion, agree, and strongly agree), and "strongly disagree" was given a score of 1 and "strongly agree" was given a score of 5. Also, the lowest score obtained from this questionnaire was 5 and the highest score was 25. After evaluating the validity, the reliability of these two questionnaires was calculated by Cronbach's alpha and retest-test. Cronbach's alpha coefficient for prevention was 0.71, 0.74 for healthy nutrition, 0.84 for exercise, 0.74 for stress management, 0.70 for social relations and 0.85 for the whole healthy lifestyle questionnaire, indicating good reliability. Also, to determine the reliability of the tool, the test-retest method was used and the reliability of prevention, healthy nutrition, exercise, stress management, social relations and the whole questionnaire was equal to 0.75, 0.83, 0.78, 0.91, 0.75, and 0.83, respectively and all of them were significant at $p < 0.001$. The reliability of Subjective Vitality Questionnaire was obtained from calculating Cronbach's alpha coefficient equal to 0.73, which was good. Also, the test-retest method was used and interclass correlation coefficient was 0.75.

The method was that after receiving the code of ethics ID IR.KMU.REC.1399.598 and an official letter of introduction from Kerman University of Medical Sciences and coordination with the Department for Health of Sirjan School of Medical Sciences and Health Services, a list of all elderly eligible to participate in the study was prepared from selected comprehensive health centers. Then, by a simple random method, a number of elderly people were selected and invited to participate in the study by phone, while introducing themselves, explaining the objectives and emphasizing the confidentiality of their information. If they want to participate in the study and have all inclusion criteria, their consent was obtained verbally and then the researcher read each question and explain how to answer it, and recorded

the answer to each question in the questionnaire. This continued until the sample size reached 200 people. Descriptive statistics including absolute frequency, frequency distribution table, mean and standard deviation were used for data analysis. Given that the distribution of the studied variables was not normal after Kolmogorov-Smirnov test, inferential statistics including non-parametric Mann-Whitney, Kruskal-Wallis, Post Hoc and Spearman correlation coefficients were used. The software used for data analysis was SPSS version 20 and in all cases the significance level was considered less than 0.05.

Results

200 elderly people from Sirjan participated in the present study with a mean age of 65.66 years and standard deviation of 3.9. Most of the participants were male (56.5%), married (63%), with university education (25%) and retired (38.5%). Demographic information of the studied elderly are given in Table 1.

The results showed that the median score of a healthy lifestyle was significantly different in terms of education. The results of Post Hoc tests showed a significant difference between the illiterate and high school ($p = 0.004$), the illiterate and university ($p = 0.001$), elementary and high school ($p = 0.010$), elementary school and university ($p = 0.021$) and reading and writing and university ($p = 0.035$). Also, a significant difference in the median score of a healthy lifestyle for marital status. The results of post hoc tests showed a significant difference between the widowed and married in healthy lifestyle ($p < 0.001$). So that the median score of a healthy lifestyle was higher in the widowed than in the married. Also, the median score of a healthy lifestyle was significantly different for employment status. The results of Post Hoc tests showed a significant difference between the retired and others ($p = 0.002$), the others group and the housewife ($p = 0.031$), the self-employed and retired ($p = 0.007$) and the housewife and the retired group ($p = 0.008$). So that the median score of a healthy lifestyle was higher in the retired than in the others. The results are presented in Table 2.

The mean and standard deviation of the variables in the fields of a healthy lifestyle, self-esteem and subjective vitality are given in Table 3. According to this Table, the mean and standard deviation of a healthy lifestyle score was 134.42 ± 13.78 , 36.34 ± 4.62 for self-esteem score and 21.80 ± 2.85 for subjective vitality score.

The results of Spearman correlation coefficient test in Table 4 indicated that the relationship between a healthy lifestyle, self-esteem and subjective vitality was direct and significant.

Discussion

In the present study, a healthy lifestyle score of 134.42 ± 13.78 was obtained out of 165. Similar to this finding, Korkmaz Aslan et al. in Turkey reported elderly lifestyle score of 136.02 ± 21.68 out of 208 at the moderate level. They concluded that having a positive attitude towards aging and psychological growth increased the participation of the elderly in health-oriented behaviors²¹. Also, Rababa et al. reported elderly lifestyle score of 125.33 ± 19.09 out of 188 in Jordan and found that chronic diseases, income

and living with a spouse were related to the elderly lifestyle²². In another study in China, a healthy lifestyle score in elderly with hypertension was reported to be 125.02 ± 21 out of 208 at the moderate level²³. Although the results of the above three studies were similar to the present study, to investigate a healthy lifestyle, health-promoting lifestyle questionnaire was used, which is different from the questionnaire used in the present study. Also in a study in Sirjan, lifestyle score of rural elderly was 131 ± 14 out of 211 at the moderate level²⁴. Cheng reported the elderly lifestyle score of 109.73 ± 16.80 out of 208 relatively weak²⁵. This study differed from the present study due to the research tool and the target population, as Cheng investigated the lifestyle of the disabled elderly in a rural area of China using Health Promoting Lifestyle Questionnaire. It seems that a healthy lifestyle is affected by place of residence, access to health services, marital status, diseases, and data collection tools.

In the present study, self-esteem score of 36.34 ± 4.62 was obtained out of 40, which indicated high self-esteem. Similar to this finding, Amani in Hamedan reported self-esteem score of 32.25 ± 8.83 out of 50 using Cooper Smith Self-Esteem Inventory and emphasized that the elderly with high self-esteem also had happiness, positive mood and life satisfaction²⁶. Also, Zhang et al. expressed self-esteem score of Chinese seniors 29.79 ± 5.13 out of 40 using Rosenberg Self-Esteem Scale. Accordingly, self-esteem was associated with reduced death anxiety of the elderly²⁷. Also, the score of this component in a study by Tian was 32.28 ± 4.09 out of 40 using Rosenberg Self-Esteem Scale. Accordingly, the elderly also had self-esteem and subjective well-being with social support²⁸. In a study in Portugal, the elderly self-esteem score was 31.34 ± 3.76 out of 40 using Rosenberg Self-Esteem Scale, and the researchers stated that psychological well-being was associated with perceived self-esteem, self-efficacy, and health²⁹. The results of these studies were similar to those of the present study. It can be said that a person's self-esteem depends on various factors such as personal skills, employment status, level of education, social support, past successes and failures, health and diseases.

In the present study, subjective vitality score of 21.80 ± 2.85 was obtained out of 25, which indicated high vitality. The score of this component in a study by Arabzadeh was 20.32 ± 4.56 out of 35 and it was emphasized that meeting the basic psychological needs of the elderly led to their subjective vitality¹¹. In a study by Ju in South Korea, subjective vitality score of the elderly was 21.18 ± 3.81 out of 30³⁰. Also, according to a study by Chang in Taiwan, subjective vitality score of the elderly was 19.83 ± 4.33 out of 25³¹. These studies were consistent with the results of the present study. It can be said that a person's vitality depends on various factors such as presence in society, proper relationships with friends, sports, recreation, job status and access to facilities. The study results of the relationship between a healthy lifestyle and education showed that a healthy lifestyle score in terms of education level was statistically significant. As the level of education increased, the score of a healthy lifestyle increased. This finding was consistent with the results of other studies^{24, 32-37}. It is possible that higher education level with better jobs and income can create a more desired lifestyle for the elderly. The study results showed that the relationship between a healthy lifestyle and marital status was statistically significant. So that the score of a healthy lifestyle in the widowed was higher than the married. According to this finding, in a study conducted on the elderly in Aliabad Katoul, the lifestyle of widowed and divorced elderly was better than

married elderly³⁸. It can be said that after the death of the spouse, although the person faces many problems, he or she attempts to prepare himself or herself to start a new life, and in order to be self-sufficient and independent, he or she seeks a suitable job and is more present in society. He or she values and respects his or her future life and that of her children, and cares about his or her health, self-care, peace of mind, and maintaining a healthy lifestyle. The study results of the relationship between a healthy lifestyle and employment status showed that the score of a healthy lifestyle for employment status was statistically significant. So that the score of a healthy lifestyle in the retired was higher than the others. Similar to this finding, in a study in Yazd, the score of a healthy lifestyle was higher in retired elderly than others³². Also in a study in Tehran, retired elderly women had a healthier lifestyle than elderly housewives³⁹. It seems that the employment status and social participation have led to the exchange of information, which is effective on promoting health literacy and adopting a healthy lifestyle.

In this study, the relationship between a healthy lifestyle and self-esteem was direct and significant. As the score of a healthy lifestyle increased, so did the score of self-esteem. No study with the same title was found to explain this finding, but this finding can be explained by inferring from different studies. In a study by Phulkerd et al., the active elderly with regular physical activities were 1.7 times more satisfied than the inactive elderly. Also, the elderly who ate adequate fruits and vegetables daily were 1.3 times more satisfied with their life than the elderly who did not eat adequate fruits and vegetables⁴⁰. A study showed that the elderly had high self-esteem and participation in society by observing health-promoting behaviors and their life satisfaction also increased⁴¹. In the study by Vandenberg et al., a mindfulness-based lifestyle program increased self-control, perception change, disease management, self-esteem, and social relationships in some adults with Parkinson's disease⁴². According to the study results of Mehra et al., the motivation of the elderly to participate in group sports was to communicate with others, maintain independence and self-reliance⁴³. Therefore, it is likely that the elderly with personal care and lifestyle changes, diet, exercise and physical activities, coping with stress and having appropriate social relationships enjoy personal independence, good physical and subjective health, which improved satisfaction, quality of life, and positive attitudes towards self and self-esteem.

In the present study, the relationship between a healthy lifestyle and subjective vitality was direct and significant. As the score of a healthy lifestyle increased, the score of subjective vitality increased. In a study, the elderly with more physical activities had normal body mass index, better cognitive function, well-being, self-esteem and vitality. On the other hand, obese elderly with inactive lifestyles with lower physical activities had poorer cognitive function, impaired memory and alertness, low psychological well-being, and lower life satisfaction⁴⁴. In a study by Hartman et al., There was a positive and significant relationship between a healthy lifestyle and vitality in adults. So that by consuming fruits and vegetables, having physical activities and not smoking and drinking alcohol, their vitality also increased⁴⁵. According to the results of a study, various factors such as the ability to do daily activities, health, healthy eating, physical activities and sports such as fishing, boating, and hiking, traveling, having fun at work and activities, the presence of friends and family increased vitality in the elderly⁴⁶. In a study by Ju, a significant relationship was between physical activities, subjective vitality and the meaning of life.

Accordingly, the elderly become active, lively and refreshed with an active lifestyle and regular physical activities, and give meaning to their life with energy and enthusiasm³⁰. It seems that the elderly, by observing a healthy lifestyle and taking care of themselves, in addition to improving their physical condition, also enjoy subjective health and vitality.

Regarding the cross-sectional nature of the study and ignorance of the precedence and latency of variables, it was not possible to determine cause-and-effect relationships. Due to Covid-19 pandemic, the data were collected through telephone interviews and reading of questionnaire questions for the elderly, which slowed down the questioning process. In this study, all the elderly surveyed lived at home. Therefore, generalizing the results to the elderly living in nursing homes should be done with caution. Also, a study similar to the present study was rarely found. As a result, further comparisons and analyzes were not possible. For gender, there were more men than women, because when making phone calls, some women were caring for their grandchildren and doing housework, postponing the interview to another time.

Conclusion

The study results showed a direct and significant relationship between a healthy lifestyle, self-esteem and subjective vitality of the studied elderly. As the score of a healthy lifestyle increased, the score of self-esteem and subjective vitality increased. Therefore, it turns out that if the elderly care about their health and select a healthy lifestyle, they will have a positive attitude towards themselves and enjoy self-esteem, vitality and well-being. This finding can help health professionals and health educators design training programs to improve the physical and subjective health of the elderly, and appropriate programs according to the role of a healthy lifestyle aimed to promote subjective health.

Declarations

Ethical considerations

Consent for publication

Not applicable.

Availability of data and materials

The datasets used and/or analyzed during the current study are in Persian and are available from the corresponding author with permission of the study group on reasonable request.

Competing interests

The authors declare that there is no conflict of interests.

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Tables 1-4

Tables 1-4 are not available with this version.